

ABSTRACT

For minimizing the span error of a pressure sensor having an essentially cylindrical platform and a measuring membrane joined to an end face of the platform, wherein the pressure measuring cell is axially clamped between an elastic sealing ring, which bears against the membrane-containing, end face of the pressure measuring cell, and a support ring, which supports the measuring cell on the rear side thereof, the dimensions of the support ring are matched to the dimensions of the sealing ring and the pressure measuring cell in such a way that a radial deformation of the membrane-containing end face resulting from the axial clamping of the pressure measuring cell is sufficiently small that the span error of the pressure sensor because of a reduction of the axial clamping force by a least 10% amounts to not more than 0.02%. The geometry of the support ring is determined iteratively by means of the FEM.

(Fig. 2)